

WE CLAIM:

1 1. A raised Serial Advanced Technology Attachment (SATA) Printed Circuit Board
2 (PCB) connector for mounting to a printed circuit board, the raised SATA PCB connector
3 configured for connection with a SATA cable connector and configured for mounting onto a
4 first side of a PCB in opposing relation with another raised SATA PCB connector similarly
5 mounted onto a second side of the PCB and also configured for connection with a SATA
6 cable connector, the raised SATA PCB connector comprising:

7 a blade connector for supporting an electrical contact arrangement compatible with a
8 SATA standard; and

9 a raised mounting portion for mounting to a first side of a PCB, the raised mounting
10 portion extending from the PCB;

11 wherein the blade connector is integrally formed with the raised mounting portion and
12 projects from the raised mounting portion, the blade connector projecting from the raised
13 mounting portion at a sufficient height from the PCB to allow the blade connector to suitably
14 connect with a SATA cable connector and to allow another SATA cable connector to be
15 suitably connected to another connector mounted in opposing relation to the second side of
16 the PCB.

1 2. The raised SATA PCB connector of claim 1, wherein the electrical contact
2 arrangement of the blade connector is configured for data signals in accordance with a SATA
3 standard.

1 3. The raised SATA PCB connector of claim 1, further comprising a SATA cable
2 connector receiving area formed around the blade connector for receipt of the SATA cable
3 connector.

1 4. The raised SATA PCB connector of claim 1, further comprising a plurality of
2 extended leads, each extended lead coupled between an electrical contact of the electrical
3 contact arrangement of the blade connector and an electrical contact of the PCB,
4 respectively, each extended lead supported by and extending along the raised mounting
5 portion.

- 1 5. The raised SATA PCB connector of claim 4, wherein the extended leads are coupled
2 to the electrical contacts of the PCB, respectively, by surface mounting.
- 1 6. The raised SATA PCB connector of claim 4, further comprising a conductive surface
2 spaced from the electrical contacts of the blade connector and the extended leads, the
3 extended leads extending parallel to, and spaced with respect to, the conductive surface.
- 1 7. The raised SATA PCB connector of claim 6, further comprising a dielectric disposed
2 between the conductive surface and the electrical contacts and the extended leads.
- 1 8. The raised SATA PCB connector of claim 7, wherein the dielectric is a plastic
2 material.
- 1 9. The raised SATA PCB connector of claim 7, wherein the dielectric is a plastic
2 material loaded with glass.
- 1 10. The raised SATA PCB connector of claim 6, wherein the electrical contacts of the
2 blade connector include ground electrical contacts and the ground electrical contacts are
3 connected and grounded to the conductive surface.
- 1 11. The raised SATA PCB connector of claim 6, further comprising conductive fasteners
2 to couple the raised mounting portion to the PCB and to a ground plane of the PCB, wherein
3 the conductive surface is connected to at least one of the conductive fasteners.
- 1 12. The raised SATA PCB connector of claim 6, further comprising conductive fasteners
2 to couple the raised mounting portion to the PCB and to a ground plane of the PCB and
3 wherein the electrical contacts of the blade connector include ground electrical contacts,
4 wherein the ground electrical contacts are connected and grounded to the conductive surface
5 and the conductive surface is connected to at least one of the conductive fasteners.
- 1 13. The raised SATA PCB connector of claim 1, further comprising a fastener to mount
2 the raised mounting portion to a through hole of the PCB such that the raised SATA PCB
3 connector is mounted to a first side of the PCB.

1 14. The raised SATA PCB connector of claim 13, wherein the fastener is a mounting
2 barb.

1 15. The raised SATA PCB connector of claim 14, wherein the mounting barb is of a split
2 design such that the mounting barb is useable with a complementary mounting barb also of a
3 split design, wherein the complementary mounting barb has a rotated orientation of
4 approximately 90 degrees with respect to the mounting barb and the complementary
5 mounting barb is used to mount an opposing raised SATA PCB connector to the through hole
6 on an opposite second side of the PCB.

- 1 16. A multi-port Printed Circuit Board Assembly (PCBA) comprising:
2 a Printed Circuit Board (PCB) for mounting within a host computer; and
3 a pair of first and second raised Serial Advanced Technology Attachment (SATA)
4 Printed Circuit Board (PCB) connectors for mounting to the PCB, the first raised SATA PCB
5 connector configured for connection with a first SATA cable connector and mounted onto a
6 first side of the PCB, the second raised SATA PCB connector mounted onto a second side of
7 the PCB in opposing relation to the first raised SATA PCB connector and configured for
8 connection with a second SATA cable connector, each of the first and second raised SATA
9 PCB connectors including:
10 a blade connector for supporting an electrical contact arrangement
11 compatible with a SATA standard; and
12 a raised mounting portion for mounting to a side of a PCB, the raised
13 mounting portion extending from the PCB;
14 wherein each blade connector of each of the first and second raised SATA
15 PCB connectors is integrally formed with the raised mounting portion of each of the
16 first and second raised SATA PCB connectors, respectively, and projects from the
17 raised mounting portion; and
18 wherein each blade connector projects from each raised mounting portion of
19 each of the first and second raised SATA PCB connectors, respectively, at a
20 sufficient height from the PCB to allow each blade connector to connect with a
21 respective SATA cable connector such that the first SATA cable connector is
22 connectable to the first raised SATA PCB connector and the second SATA cable
23 connector is connectable to the second raised SATA PCB connector.
- 1 17. The multi-port PCBA of claim 16, wherein each electrical contact arrangement of
2 each blade connector is configured for data signals in accordance with a SATA standard.
- 1 18. The multi-port PCBA of claim 16, wherein each of the first and second raised SATA
2 PCB connectors each includes a SATA cable connector receiving area formed around the
3 blade connector for receipt of a SATA cable connector.

1 19. The multi-port PCBA of claim 16, wherein each of the first and second raised SATA
2 PCB connectors each includes a plurality of extended leads, each extended lead coupled
3 between an electrical contact of the electrical contact arrangement of the blade connector and
4 an electrical contact of the PCB, respectively, each extended lead supported by and extending
5 along the raised mounting portion.

1 20. The multi-port PCBA of claim 19, wherein the extended leads are coupled to the
2 electrical contacts of the PCB, respectively, by surface mounting.

1 21. The multi-port PCBA of claim 19, wherein each of the first and second raised SATA
2 PCB connectors each includes a conductive surface spaced from the electrical contacts of the
3 blade connector and the extended leads, the extended leads extending parallel to, and spaced
4 with respect to, the conductive surface.

1 22. The multi-port PCBA claim 21, wherein each of the first and second raised SATA
2 PCB connectors each includes a dielectric disposed between the conductive surface and the
3 electrical contacts and the extended leads.

1 23. The multi-port PCBA of claim 22, wherein the dielectric is a plastic material.

1 24. The multi-port PCBA of claim 22, wherein the dielectric is a plastic material loaded
2 with glass.

1 25. The multi-port PCBA of claim 21, wherein the electrical contacts of the blade
2 connector include ground electrical contacts and the ground electrical contacts are connected
3 and grounded to the conductive surface.

1 26. The multi-port PCBA of claim 21, wherein each of the first and second raised SATA
2 PCB connectors each includes conductive fasteners to couple each respective raised
3 mounting portion to the PCB and to a ground plane of the PCB, wherein the conductive
4 surface is connected to at least one of the conductive fasteners.

1 27. The multi-port PCBA of claim 21, wherein each of the first and second raised SATA
2 PCB connectors each includes conductive fasteners to couple each respective raised

3 mounting portion to the PCB and to a ground plane of the PCB and wherein the electrical
4 contacts of the blade connector include ground electrical contacts, wherein the ground
5 electrical contacts are connected and grounded to the conductive surface and the conductive
6 surface is connected to at least one of the conductive fasteners.

1 28. The multi-port PCBA of claim 21, wherein each of the first and second raised SATA
2 PCB connectors each includes a fastener to mount the raised mounting portion of each first
3 and second raised SATA PCB connector to a through hole of the PCB, respectively, such that
4 the first raised SATA PCB connector is mounted to the first side of the PCB and the second
5 raised SATA PCB connector is mounted to the second side of the PCB.

1 29. The multi-port PCBA of claim 28, wherein the fastener is a mounting barb.

1 30. The multi-port PCBA of claim 29, further comprising a complementary mounting
2 barb, wherein the mounting barb is of a split design such that the mounting barb is useable
3 with the complementary mounting barb which is also of a split design, wherein the
4 complementary mounting barb has a rotated orientation of approximately 90 degrees with
5 respect to the mounting barb, such that the mounting barb is used to mount the first raised
6 SATA PCB connector to the first side of the PCB and the complementary mounting barb is
7 used to mount the second raised SATA PCB connector to the second side of the PCB.